

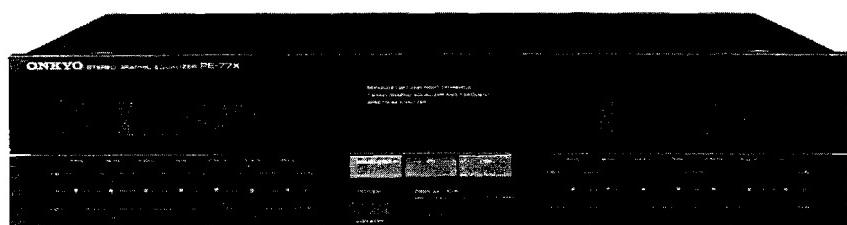


ONKY -00646

SERIAL NO. 3298

# ONKYO® SERVICE MANUAL

## Stereo Graphic Equalizer MODEL PE-77X



UW

120V/220V AC, 50Hz/60Hz

### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PARTS NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

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## SPECIFICATIONS

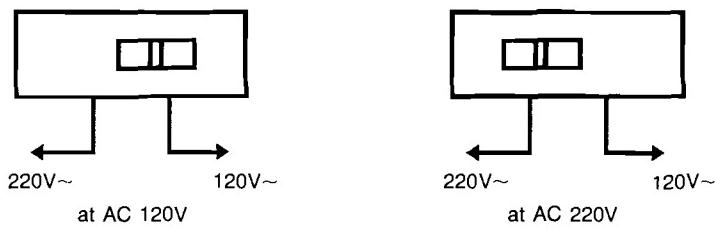
Input:	Input sensitivity (FLAT): 150mV Input impedance: 50 kohms
Output:	Output voltage (FLAT): 150mV Output impedance: 1.0 kohms
Max. input:	4.5 volts, 20Hz-20kHz, 0.05% THD
Frequency response:	10Hz to 35kHz (+0, -0.5dB)
Total harmonic distortion:	Less than 0.01% at 20Hz-20kHz. 1.5V output (FLAT)
Signal to noise ratio:	100dB, 1.5V output, IHF-A input short.
Adjustable range:	±12dB
Gain:	0dB
Power supply:	AC 120V and 220V (Switchable), 50/60Hz
Dimensions:	360(W) × 86(H) × 341(D)mm 14-3/16" × 3-3/8" × 13-7/16"
Weight:	3.3kg, 7.3lbs.

Specifications and features are subject to change without notice.

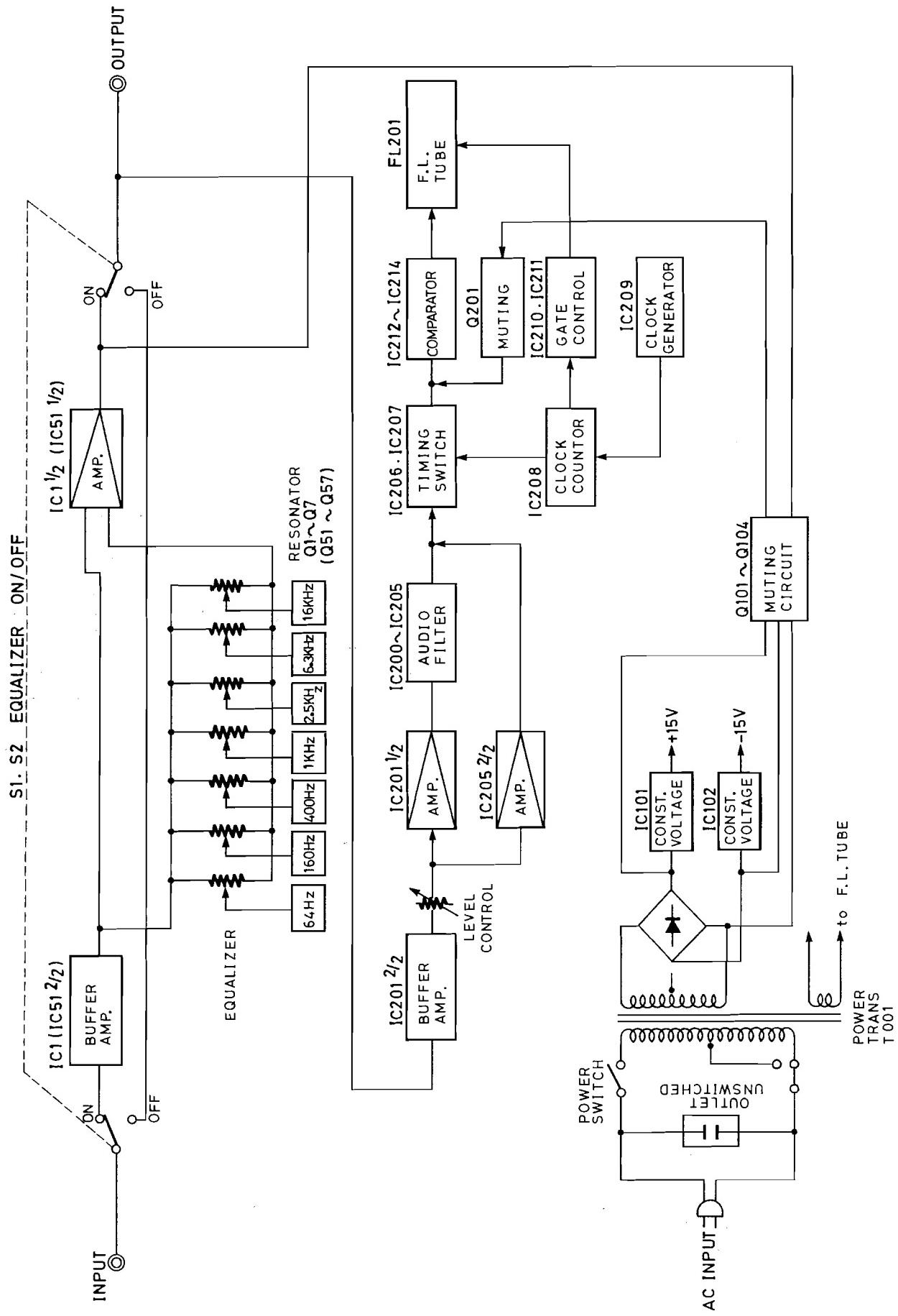
## PRECAUTIONS

### 1. Voltage selector (rear panel)

Worldwide models are equipped with a voltage selector to conform with local power supplies. Be sure to set this switch to match the voltage of the power supply in your area before turning the power switch on. Voltage is changed by sliding the groove in the switch with a screwdriver to the right or left. Confirm that the switch has been moved all the way to the right or left before turning the power switch on. Models without a voltage selector can only be used in areas where the power supply is the same as that of the unit.

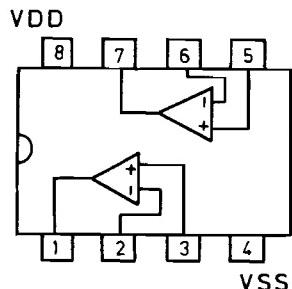


## BLOCK DIAGRAM

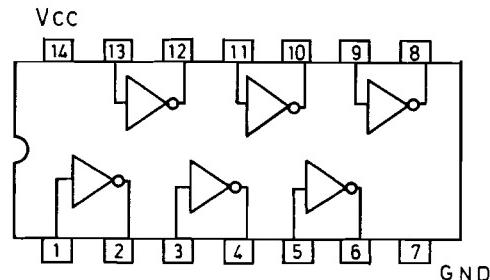


## IC BLOCK DIAGRAM

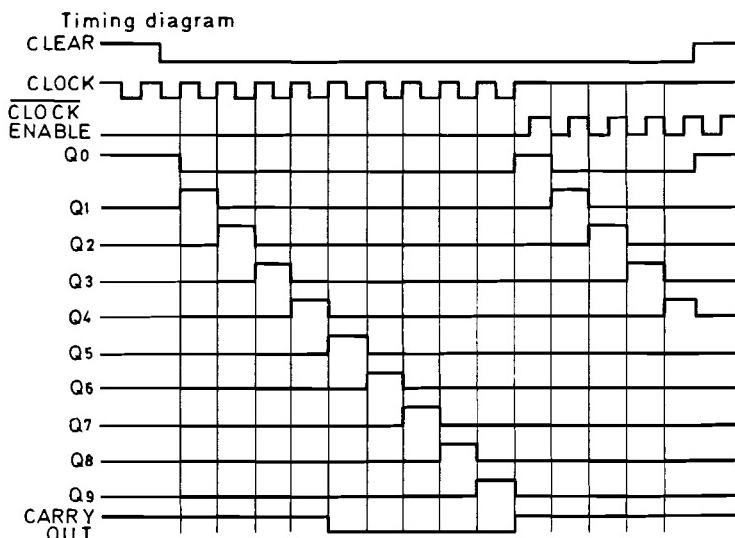
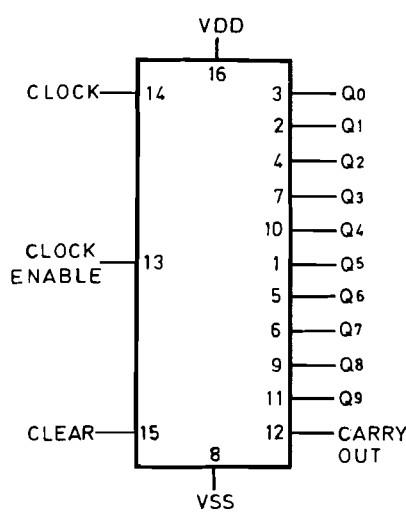
**NJM4558DD (OP Amp)**  
**NJM4560DD (OP Amp)**



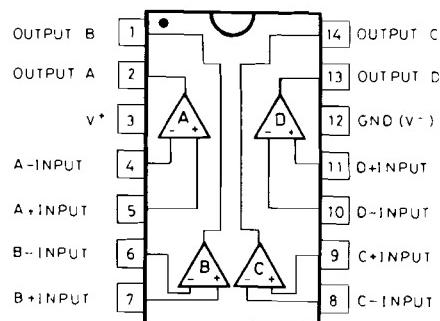
**4069UBP (Inverter)**



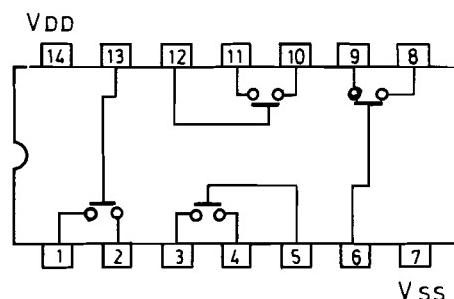
**4017BP (Decode Counter)**



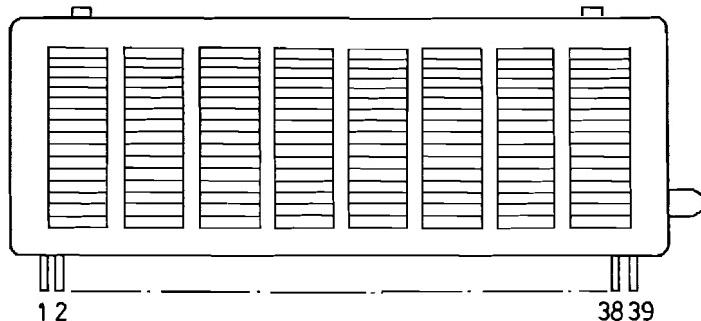
**HA17339 (Comparator)**



**4066 (Switch)**



## BG-507ZK (Fluorescent Tube)



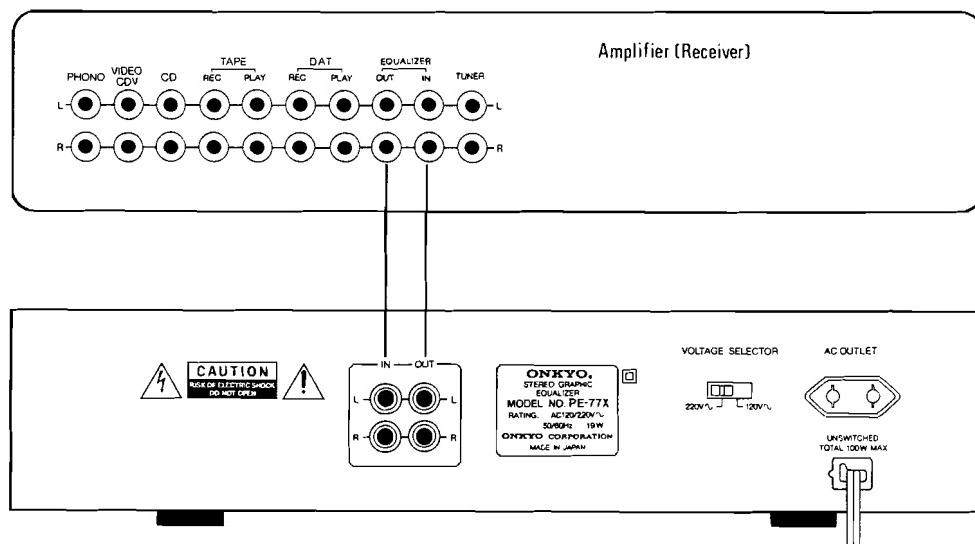
Pin No.	1	2	3	4	5	6	7	8	9	10
Electrod	F	—	S1	S2	S3	8G	S4	S5	S8	7G

Pin No.	11	12	13	14	15	16	17	18	19	20
Electrod	S7	S8	—	6G	—	—	—	5G	—	—

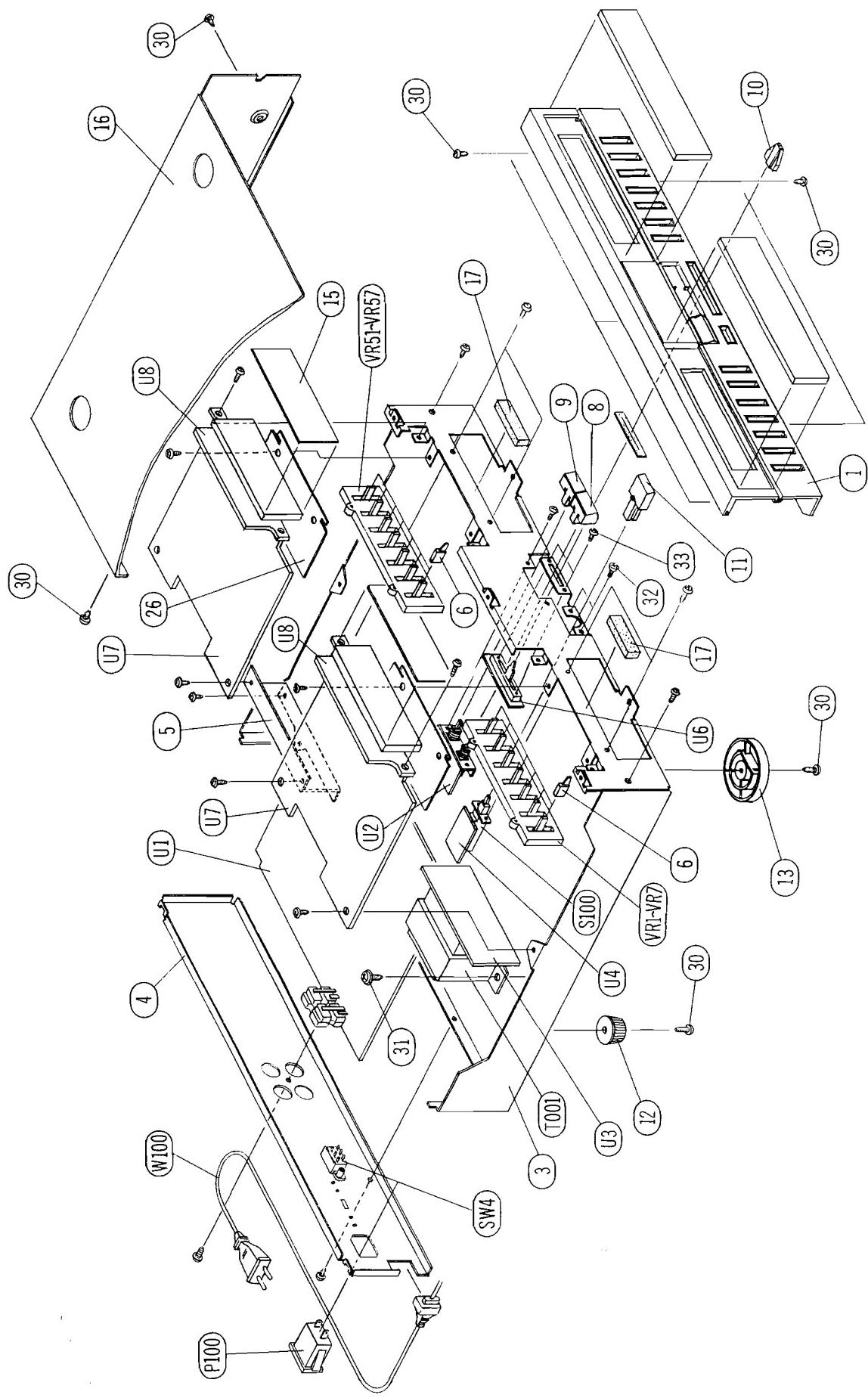
Pin No.	21	22	23	24	25	26	27	28	29	30
Electrod	—	4G	—	—	—	3G	S9	S10	S11	2G

Pin No.	31	32	33	34	35	36	37	38	39	
Electrod	S12	S13	S14	1G	S16	S17	—	—	F	

## SYSTEM CONNECTIONS



## CHASSIS-EXPLODED VIEW

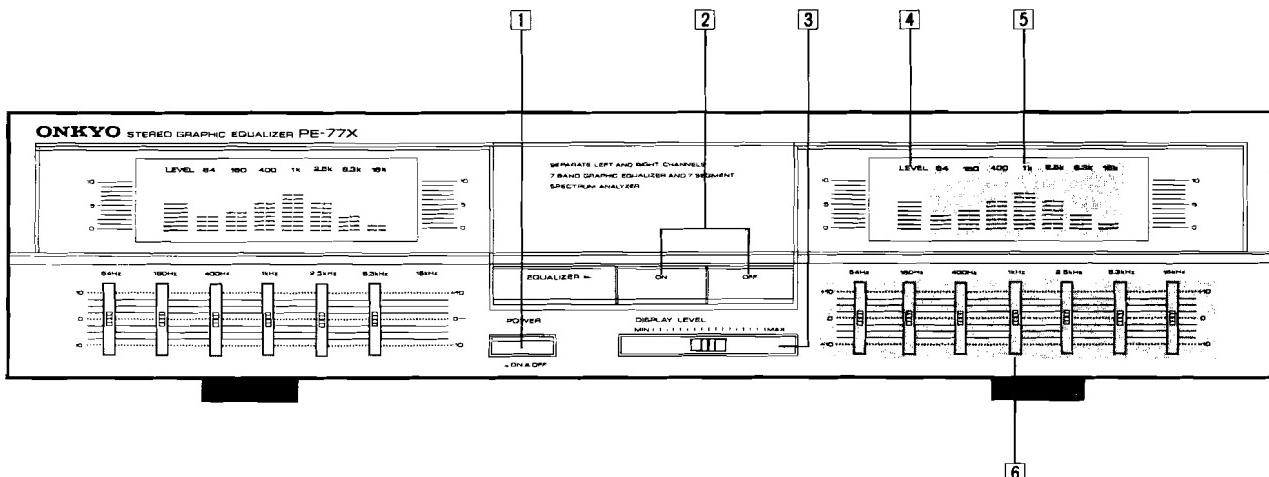


## CHASSIS-EXPLODED VIEW-PARTS LIST

REF. NO.	PART NO.	DESCRIPTION			
1	27210912	FRONT PANEL ASS'Y	△ SW4	25065228	NSS-2299, SLIDE SWITCH
(1)	27210913	FRONT PANEL	U1	1W011551-1	NAAF-3151-1, EQUALIZER
(1)	27267532	GUIDE (F)			CIRCUIT PC BOARD ASS'Y
(1)	28140790	CUSHION (KNOB)	U2	1W011552-1	NASW-3152-1, EQUALIZER
(1)	28323211	KNOB, EQ			SWITCH PC BOARD ASS'Y
(1)	28191445	CLEAR PLATE	U3	1W020553-2	NAPS-3153-2, POWER
3	27100154	CHASSIS			TRANSFORMER PC BOARD
4	27121125	BACK PANEL	U4	1W020554-2	ASS'Y
5	27130524	BRACKET			NASW-3154-2, POWER SWITCH PC
6	28323050	KNOB, GE	U6	1W011556-1	BOARD ASS'Y
8	28323212	KNOB, EQ (N)			NAETC-3156-1, DISPLAY LEVEL
9	28323213	KNOB, EQ (F)	U7	1W011557-1	CONTROL PC BOARD ASS'Y
10	28323214	KNOB, LEV			NADG-3157-1, DISPLAY
11	28323097A	KNOB, POW	U8	1W011558-1	CONTROL PC BOARD ASS'Y
12	27175174	BOTTOM LEG, REAR			NADIS-3158-1, FLTUBE PC
13	27175173	BOTTOM LEG, FRONT			BOARD ASS'Y
15	28133193	BACK PLATE			
16	28184370	TOP COVER			
17	28140789	CUSHION			
26	27150245	SHIELD PLATE			
30	838430088	3TTB+8BBC, TAP-TIGHT SCREW			
31	830440089	M-4, TAP-TIGHT SCREW			
32	82243005	3S+5FN, PAN HEAD SCREW			
33	82142003	2P+3FBC, SMALL SCREW			
VR1~VR7	6101001	N15GLC100KW15Z×7, SLIDE VARIABLE RESISTOR			
VR51~VR57					
△ T001	2300358	NPT-980DG, POWER TRANSFORMER			
△ S100	25035577	NPS-111-L534P, POWER SWITCH			
△ P100	25050337	NSCT-2P164, AC SOCKET			
△ W100	253152	AS-PE77XU, POWER SUPPLY CABLE			

NOTE: THE COMPONENTS IDENTIFIED BY MARK △ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PARTS NUMBER SPECIFIED.

## FRONT PANEL FACILITIES



1. Power Switch (POWER)
2. Equalizer Switch (EQUALIZER)
3. Display Level Control (DISPLAY LEVEL)
4. Level Indicator
5. Spectrum Analyzer Displays
6. Level Controls

# PRINTED CIRCUIT BOARD PARTS LIST

## EQUALIZER CIRCUIT PC BOARD (NAAF-3151-1) PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
<b>ICs</b>		
IC1, IC51	22240044	NJM4560DD
IC101	222780151	78M15
IC102	222790151	79M15
<b>Transistors</b>		
Q1~Q7	2213284	2SC1740S-R
Q51~Q57		
Q101, Q102	2212485	JCS501Q
Q103, Q104	2212285	2SC2878A
<b>Diodes</b>		
D101	223892	DF02M
D102	2243213	MTZ10C
D103, D104	223172	ISS131
D105	2243233	MTZ12C
<b>Capacitors</b>		
C1, C51	354780109	1μF, 50V, Elect.
C2, C52	354780479	4.7μF, 50V, Elect.
C3, C53	370134714	470pF, 100V, Film (APS)
C4, C54	354780339	3.3μF, 50V, Elect.
C5, C55	371126835	0.068μF, 50V, Mylar
C6, C56	354780159	1.5μF, 50V, Elect.
C7, C57	371122235	0.022μF, 50V, Mylar
C8, C58	354784799	0.47μF, 50V, Elect.
C9, C59	371121035	0.01μF, 50V, Mylar
C10, C60	354781599	0.15μF, 50V, Elect.
C11, C61	371126825	6800pF, 50V, Mylar
C12, C62	371126835	0.068μF, 50V, Mylar
C13, C63	371122725	2700pF, 50V, Mylar
C14, C64	371122735	0.027μF, 50V, Mylar
C15, C65	371121525	1500pF, 50V, Mylar
C16, C66	371121035	0.01μF, 50V, Mylar
C17, C67	370138214	820pF, 100V, Film (APS)
C102, C103	379121035	0.01μF, 50V, Film (DEW)
C104	354741009	10μF, 16V, Elect.
C105, C106	354764719	470μF, 35V, Elect.
C107, C108	354754709	47μF, 25V, Elect.
C109	354762219	220μ, 35V, Elect.
C110	354763309	33μ, 35V, Elect.
<b>Terminal</b>		
	25045219	T5812-FA. 4P
<b>Jumper socket</b>		
	25050145	NJPS-8P-S
<b>Heatsink</b>		
	27160217	

## EQUALIZER SWITCH PC BOARD (NASW-3152-1) PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
<b>Switch</b>		
S1, (S2)	25035578	NPS-142-122-L540

## POWER TRANSFORMER PC BOARD (NAPS-3153-2) PARTS LIST

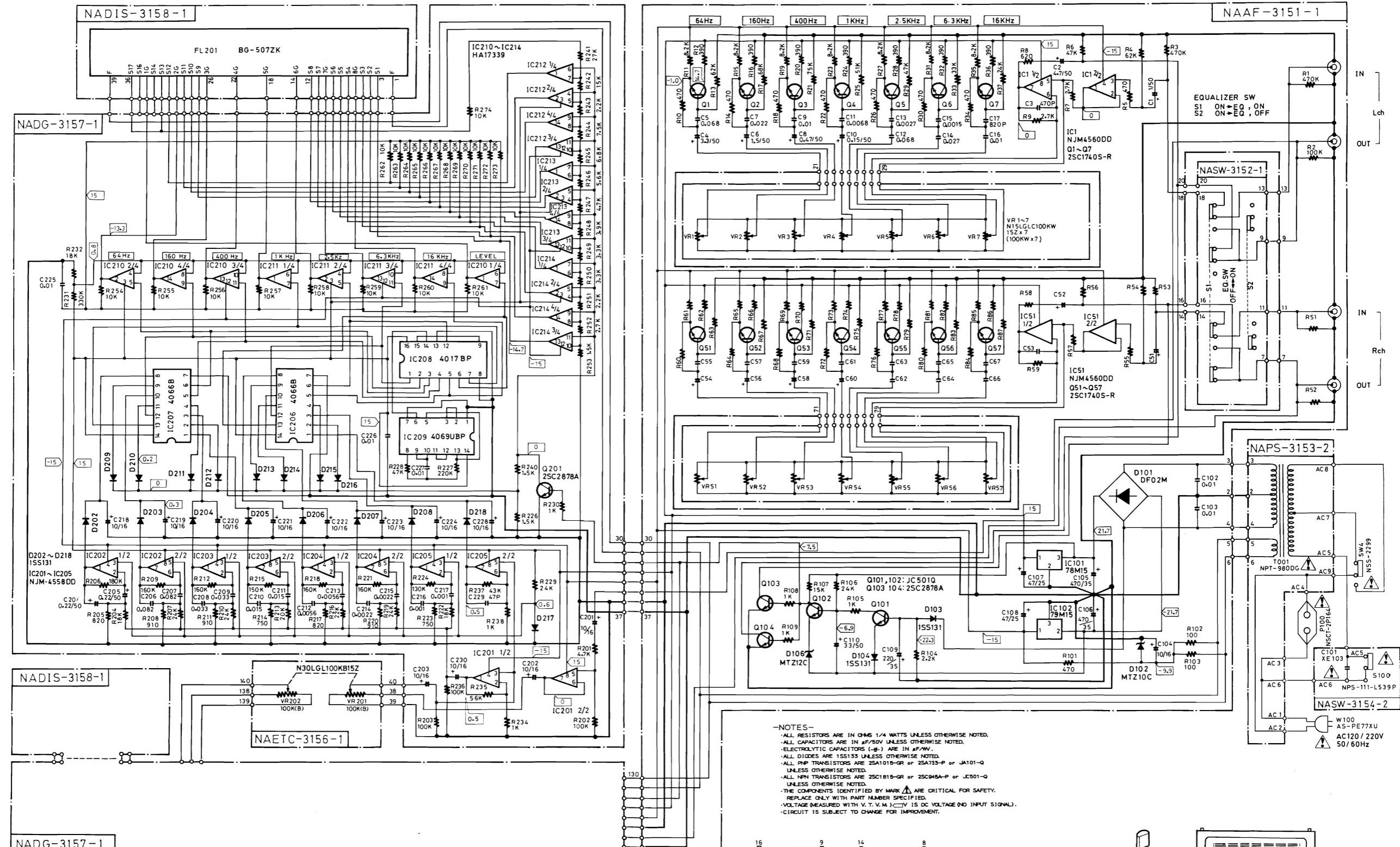
CIRCUIT NO.	PART NO.	DESCRIPTION
<b>Power transformer</b>		
T001	2300358	NPT980DG

## POWER SWITCH PC BOARD (NASW-3154-2) PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
<b>Capacitor</b>		
C101	3500065A	0.01μF, AC400/125V, Film (IS)
<b>Capacitor cover</b>		
C101a	27300601	SB1925
<b>Switch</b>		
S100	25035577	NPS-111-L539P
<b>DISPLAY LEVEL CONTROL PC BOARD (NAETC-3156-1) PARTS LIST</b>		
CIRCUIT NO.	PART NO.	DESCRIPTION
VR201, (VR202)	6112006	N30LGL100KB15Z
CIRCUIT NO.	PART NO.	DESCRIPTION
<b>DISPLAY CONTROL PC BOARD (NADG-3157-1) PARTS LIST</b>		
CIRCUIT NO.	PART NO.	DESCRIPTION
<b>ICs</b>		
IC201~IC205	222811	NJM4558DD
IC206, IC207	222840661	4066B
IC208	222840171	4017BP
IC209	222840692	4069UBP
IC210~IC214	22240117	HA17339
<b>Diodes</b>		
D202~D218	223172	ISS131
<b>Capacitors</b>		
C201~C203	354741009	10μ, 16V, Elect.
C204, C205	354782299	0.22μF, 50V, Elect.
C206, C207	371128235	0.082μF, 50V, Mylar
C208, C209	371123335	0.033μF, 50V, Mylar
C210, C211	371121535	0.015μF, 50V, Mylar
C212, C213	371125625	5600pF, 50V, Mylar
C214, C215	371122225	2200pF, 50V, Mylar
C216, C217	371121025	1000pF, 50V, Mylar
C218~C224	354741009	10μF, 16V, Elect.
C228, C230		
<b>Jumper socket</b>		
25050140	NJPS-3P-S	
<b>FL TUBE PC BOARD (NADIS-3158-1) PARTS LIST</b>		
CIRCUIT NO.	PART NO.	DESCRIPTION
<b>FL tube</b>		
FL201	212043	BG-507ZK

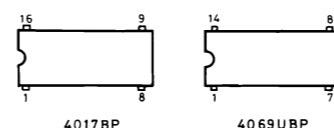
## FL TUBE PC BOARD (NADIS-3158-1) PARTS LIST

## **SCHEMATIC DIAGRAM**

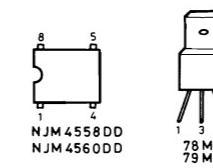


-NOTES-

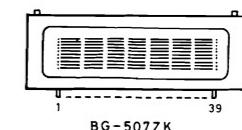
- ALL RESISTORS ARE IN CHMS 1/4 WATTS UNLESS OTHERWISE NOTED.
- ALL CAPACITORS ARE IN  $\mu$ F/50V UNLESS OTHERWISE NOTED.
- ELECTRICAL CONNECTIONS (-) ARE IN  $\mu$ A/W.
- ALL DIODES ARE 1N5313 UNLESS OTHERWISE NOTED.
- ALL PNP TRANSISTORS ARE 2SA1015-GR OR 2SA1733-P OR JA101-Q UNLESS OTHERWISE NOTED.
- ALL NPN TRANSISTORS ARE 2SC1815-GR OR 2SC945A-P OR JC501-Q UNLESS OTHERWISE NOTED.
- THE COMPONENTS IDENTIFIED BY MARK  ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED.
- VOLTAGE (MEASURED WITH V. T. V. M.)  IS DC VOLTAGE (NO INPUT SIGN).



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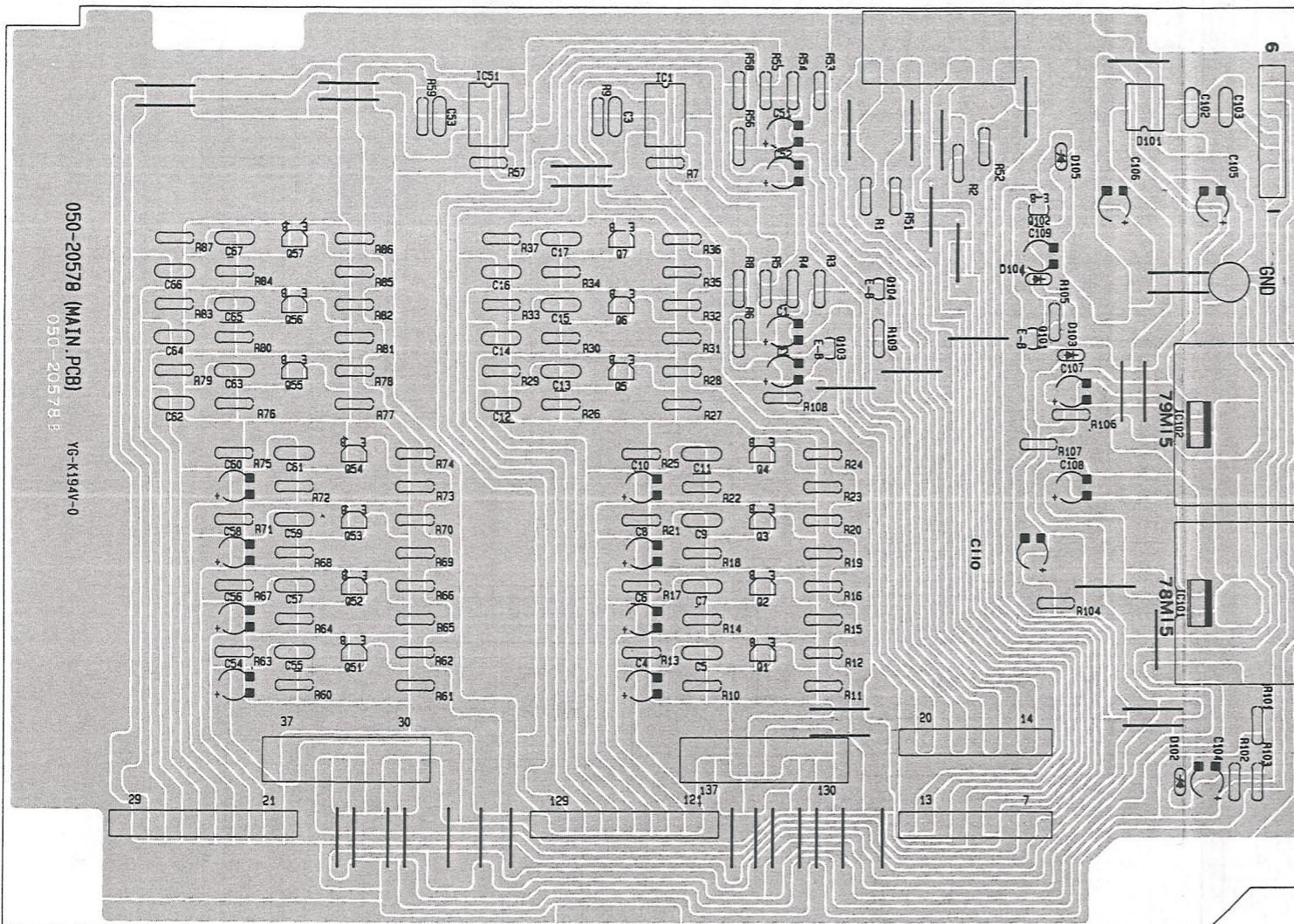
NJM455  
NJM456



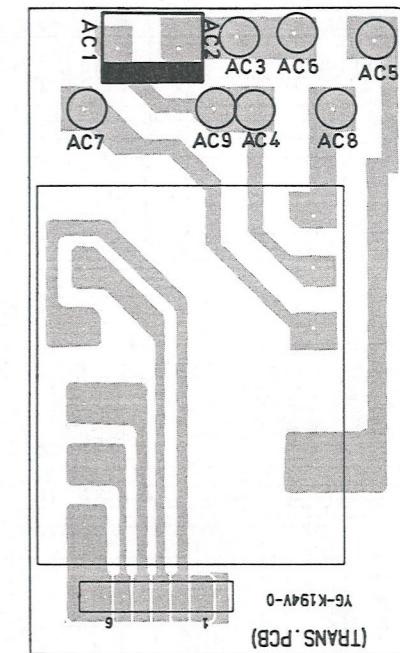
BG-5077

## PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE

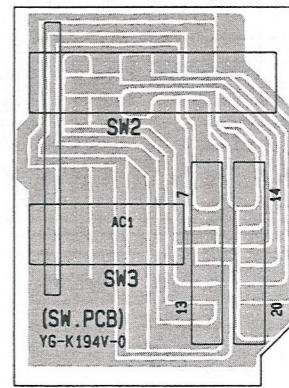
NAAF-3151-1



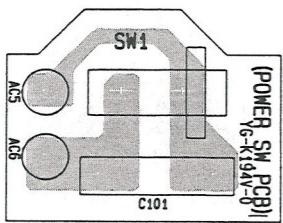
NAPS-3153-2



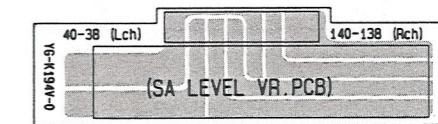
NASW-3152-1



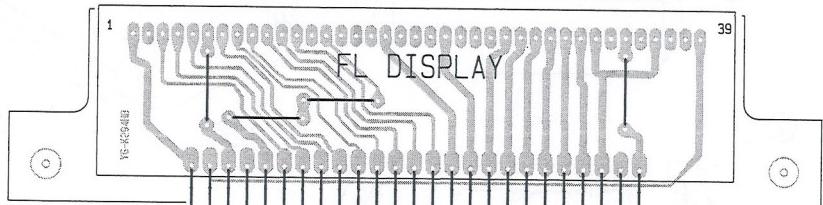
NASW-3154-2



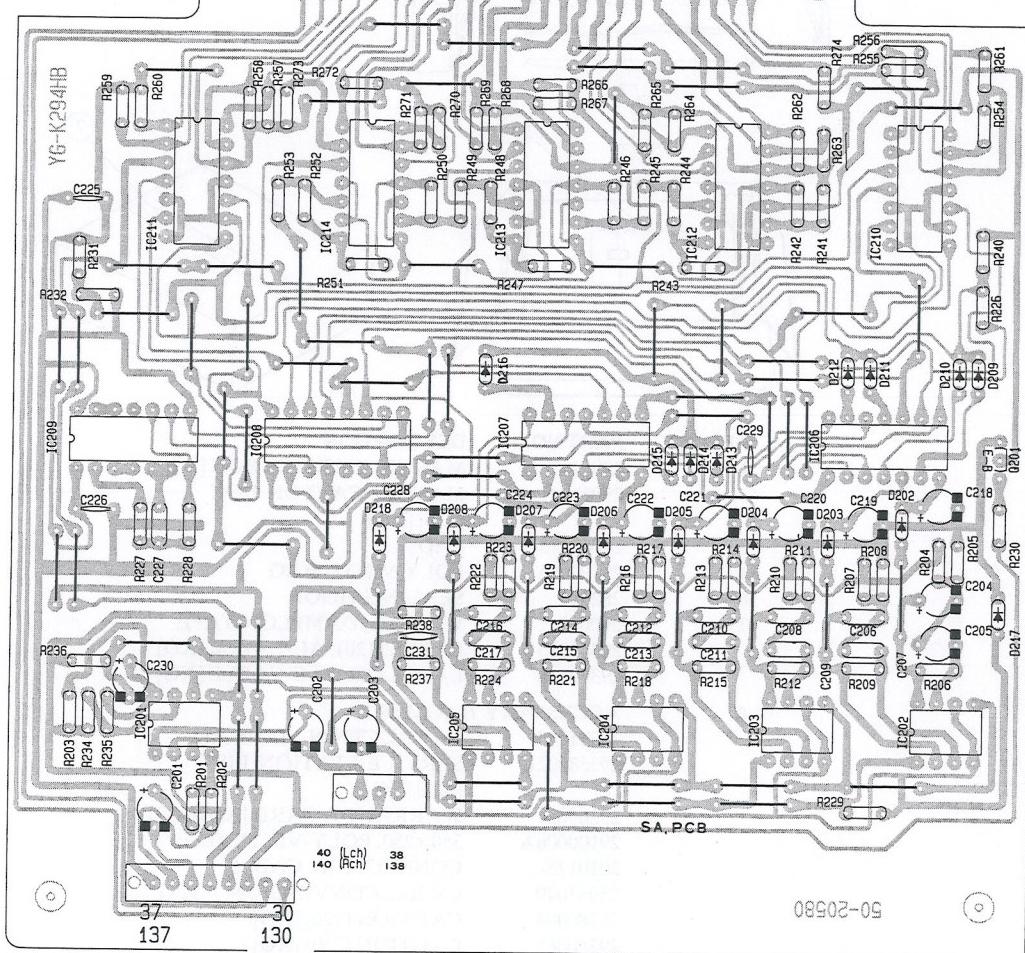
NAETC-3156-1



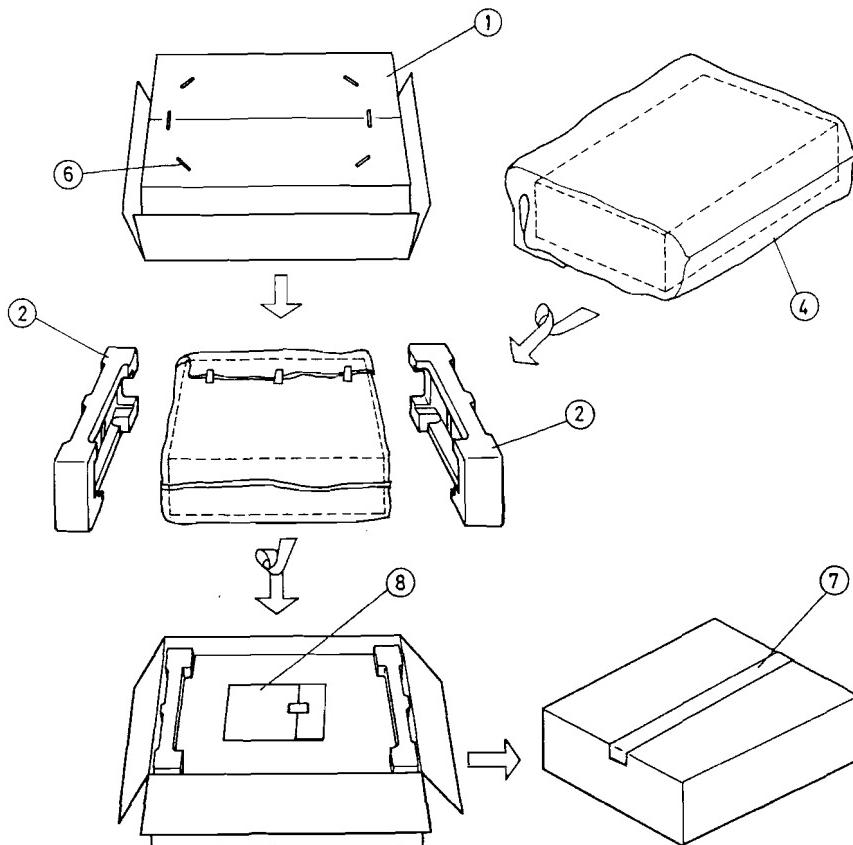
NADIS-3158-1



NADG-3157-1



## PACKING PROCEDURES



REF. NO.	PART NO.	DESCRIPTION
1	29051698	MASTER CARTON BOX [W]
	29051741	MASTER CARTON BOX [XD][XG]
2	29091223	PAD
4	29100095	POLY-VINYL BAG
6	282301	SEALING HOOK
7	260012	W=50mm, DAMPLON TAPE
	29360815	LABEL (120), AC CABLE [XD]
	29360816	LABEL (220), AC CABLE [XG]
8	ACCESSORY BAG ASS'Y 29341243 29358002F	INSTRUCTION MANUAL SERVICE STATION LIST [XD][XG]
	29365021 29100006A 2010173 25055040 29380084 29380085	WARRANTY CARD [XD][XG] 350×250, POLY-VINYL BAG CONNECTION CABLE CV-K-2, CONVERSION PLUG CAUTION (120) [XD] CAUTION (220) [XG]

NOTE [W]: ONLY WORLDWIDE MODEL  
 [XD]: ONLY MILITARY MARKET, 120V MODEL  
 [XG]: ONLY MILITARY MARKET, 220V MODEL

## ONKYO CORPORATION

International Division: No. 24 Mori Bldg., 23-5, Nishi-Shimbashi 3-chome, Minato-ku,  
 TOKYO 105, JAPAN Tel: 03-432-6987 Fax: 03-436-6979 TLX: 242-3551 ONKYO J  
**ONKYO U.S.A. CORPORATION**  
 200 Williams Drive, Ramsey, N.J. 07446, U.S.A. Tel: 201-825-7950 Fax: 201-825-8150